

1913—First seen, April 13. Last seen, May 4.

1914—First seen, April 10. Last seen, ———.

I cannot resist alluding to the several outward resemblances, in habit and appearance, between shorelarks and shorebirds (*Limicolae*). The whistled "pe-u," appearance while walking and running, and the partially ringed neck of *Otocoris* all recall certain shorebirds; and coupled with the habit of associating with shorebirds during migration, these resemblances are responsible for the destruction of many larks by mistaken gunners.

St. Lambert, Que.

ANNOTATED LIST OF THE WATER BIRDS, GAME
BIRDS AND BIRDS OF PREY OF SAC
COUNTY, IOWA.

BY J. A. SPURRELL.

My purpose in writing this list is to place on record personal observations, which if trusted to memory or even to note-books would be lost, and also much data gathered from the pioneers of the county, which is much more valuable than my own observations.

My personal interest in birds dates from my early childhood. When I first began to keep a record of the species identified in July, 1907, I had a local list of about fifty species. My first Reed's Bird Guides were purchased in 1906. They had been preceded by a complete file of "Birds and Nature" and were followed by many other bird books. After that my local list grew steadily until it now numbers one hundred sixty-five species. In my own identifications I have used extreme care in making records of species, excluding everything doubtful. I have used eight-power stereo-binoculars the last four years. I have also identified all dead specimens found. In gathering data from the pioneers I have used extreme care to differentiate species, excluding everything doubtful.

I am indebted to the following people for records and information. Mr. C. Orville Lee of Sac City, whose parents came to Sac County in 1854, and who was born in 1860. In his youth he improved all opportunities for hunting and has always been a keen observer of things natural, being still interested in the subject. Mr. Hugh Cory of Sac City, who came to Sac County in 1854 as one of the first party of white settlers. Mr. Shelt Tiberghien of Sac City, who came to Sac County in 1856. The earliest settlers obtained most of their living from the game animals and birds and were keen observers of them. Mr. Harry Colburn of Sac City, furnished one observation, and Mr. Platt Armstrong of Lake View, who came to the county in 1878, a few. Dr. A. S. Hayden of Wall Lake, who came in 1873, and his wife, who came in 1878, also their daughter, Mrs. George May, have furnished much valuable data. My father, John Spurrell, who came to Wall Lake in 1875, contributed some data. One of my most valuable sources of data was Mr. and Mrs. H. B. Smith of Odebolt, who came to the county in 1876. They not only furnished information but had formed a collection of mounted birds which included nearly all the game birds of the region, besides many land birds. Mr. Smith is now dead, but his wife still maintains the collection, which they had started many years ago in Ohio. I visited them July 28, 1913, while Mr. Smith was living, and obtained information about all the specimens taken in Sac and adjoining counties.

While, in general, the topography of Sac County is that of a treeless prairie, except for the now numerous planted groves, there are two distinct types of land surface. The eastern half of the county is within the Wisconsin glaciation, characterized by very gentle swells, a few low knobs, a level landscape, and very poor drainage conditions. At the time of settlement all the low-lying land in this area was either pond, marsh, or slough. The roads wound around, following the ridges of the low swells. At the present time the roads follow section lines, all of the ponds and the great majority of the marshes and sloughs having been drained.

Correction pond, Lard lake, Rush lake, and many smaller ponds are now farm land. This section is drained by the Raccoon river, locally called the "Coon," and its tributaries, Cedar river and Indian creek. The drainage from Wall lake, the only one remaining, flows into Indian creek. The Raccoon river enters the county on its north line about six miles from its northeast corner, flowing in a southerly direction about eighteen miles, when it turns and flows eastward, its waters finally reaching the Mississippi. The "Coon" river has cut a broad valley about fifty feet deep. The river follows a winding course through this valley, sometimes cutting into the sides and forming steep bluffs. The bluffs and part of the bottom lands are now timbered. At the time of settlement its timber fringe was from one to four miles broad. The enlarged parts were known as Grant Grove, located where the river turns east; Cory Grove, about three miles south of Sac City; and Lee's Grove, about eight miles north of Sac City. The first settlements in the county were at Grant Grove, which became Grant City, and at Sac City, in the year 1854. Until about 1870 there were very few settlers other than along this timbered well drained strip along the "Coon" river. Having so limited a habitat the forest-loving game birds were speedily exterminated.

The western half of the county is within the Kansan glaciation and characterized by a gently rolling to roughly rolling surface, the highest hills being about sixty feet, with a mature drainage and no lakes, ponds, or marshes. This section is drained by the Boyer river and a few small creeks tributary to it, all their waters finally reaching the Missouri river. The Boyer river occupies a flood plain about a mile wide, across and down which it follows an exceedingly tortuous course. It has a local reputation of being the crookedest river there is. Its general direction is southerly until within four miles of the south line of the county, when it turns abruptly southwest.

The two glaciations are divided by the Wisconsin moraine, which is several miles broad, and partakes of the general

rolling topography. A portion of it is locally known as the "Big Ridge." For about twenty miles its eastern border is followed by Indian creek flowing south. The creek then turns and flows east into the Raccoon river, passing within one-fourth mile of Wall lake, the waters of which flow several miles to reach it. Wall lake is situated just south of the turn in Indian creek. It has an irregular outline, does not exceed ten feet in depth at the deepest part, and in general is shallow, covering an area of about nine hundred and sixty acres, or approximately two square miles. It gets its name from an irregular "wall" of glacial boulders or "nigger-heads," which were piled around its shores by the ice expansion of winter and the break-up in spring. Only small portions of the "wall" remain, most of it having been long since hauled away for barn foundations.

Wall lake and the Boyer river are connected by a depression which appears to be a pre-glacial channel of the Boyer river. This broad flat valley extends directly across the Wisconsin moraine. It extends southwesterly from Wall lake to the Boyer river, passing to the south of the town of Wall Lake. The two miles of this valley next to the Boyer river are lower than the banks of the Boyer and this depression is flooded by back-water from the Boyer river every spring and some years very frequently during the summer. The summer of 1915 it was full of water all summer, but in ordinary years the water runs out very slowly, leaving the "Goosepond," as it is locally known, dry during late fall and winter. In times of extreme high water, which occur every five to ten or fifteen years, the waters from the Boyer entirely flood the very low divide at the east end of the "Goosepond" and flow into Wall lake, thus mingling the waters of the Missouri and Mississippi drainage systems, sufficiently so that aquatic forms of life could pass from one to the other. An elaborate plan for draining the "Goosepond" is now being projected.

Since the "Goosepond" is nearly always flooded in the spring, it is a favorite resort of the migrating waterfowl and

shore birds, the more so since the neighboring Wall lake is usually ice bound for some time after the earliest migrants arrive.

The tales the early settlers tell of the abundance of water-fowl and prairie upland game birds seem almost incredible today. Mrs. E. B. Hayden said, "I have seen the entire east end (about one square mile) of Wall lake so thickly covered with ducks during the spring migration that the water seemed black." Dr. Hayden said, "Every pond and mud-hole was covered with broods of young ducks."

According to Mr. Lee or Mr. Smith, swans, Canada geese, sandhill cranes, prairie chickens, upland plover, and long-billed curlew nested within the county, besides the following ducks, ranked in the order of abundance as nesting species: blue-winged teal, green-winged teal, mallard, spoon-bill, pintail, wood duck, black head or scaup, and redhead. Mr. Tiberghien also reported the whooping crane as nesting.

Today, most of these do not nest in the county at all, only prairie chickens, mallards, blue-winged teal rarely nesting. Mr. Lee stated that ninety per cent of the ducks raised in Iowa today are blue-winged teal.

Mr. Smith ranked the ducks in order of abundance as mallards, pintail, and teal as being common, then wood duck, canvas-back, and hooded merganser next in order of abundance, with the old-squaw as the rarest of all. The time of which he spoke was from 1876 to about 1885.

SPECIES LISTED.

Eared Grebe (*Colymbus nigricollis californicus*). The only record is a specimen in the Smith collection. I have seen large grebes on Wall lake, but could not certainly identify them at the time.

Pied-billed Grebe (*Podilymbus podiceps*). I have found this grebe to be tolerably common on Wall lake and the "Goosepond" during migration. My earliest migration date is April 11, 1915. There are two specimens in the Smith collection. I am not aware of its breeding.

Loon (*Gavia immer*). Mr. Lee reported that loons nested, their young being seen, on Rush and Lard lakes north of Sac City, every year until 1900. Loons were also reported by Mr. Tiberghien.

Herring Gull (*Larus argentatus*). I first identified it April 11, 1915, when I saw a single bird in winter plumage in the "Goosepond." Mrs. George May also reported three seen in the "Goosepond" April 16, 1911. There is one specimen in the Smith collection.

Franklin Gull (*Larus franklini*). Specimen in the Smith collection. This species is an abundant migrant both spring and fall. At both seasons, a flock will often follow a farmer plowing for hours at a time, usually coming in the forenoon and again in the afternoon, at times alighting on the plowing and resting for a half hour or less. They follow the plow very closely and I have seen them swoop down, capture and swallow white grubs, angleworms, and other insects. While disking fall plowed land in the spring I have seen a Franklin gull capture and swallow an adult prairie white-footed mouse, although the mouse went down with difficulty. Another farmer reported the gulls capturing an entire family of mice which were plowed out.

Occasionally in the spring I have seen huge flocks of these gulls, after much preliminary circling, alight upon a bluegrass pasture, resting there for some time, in such numbers as to make the ground appear white. In the fall the young birds, with different plumage from the adults, make up a majority of the flocks, which frequently stay in the vicinity several weeks. Sometimes all members of a flock will scatter far apart and start circling *high* in the air, until the sky is filled with their soaring and circling forms as high as the eye can distinguish them. In feeding they range over the entire country, not confining their attention to bodies of water. When feeding they usually fly in loose straggling flocks, but when migrating, in a compact flock. Mrs. George May reported them in "Goosepond" April 14, 1911.

MIGRATION DATA.

Year	Spring.			Fall.		
	First seen.	Became common.	Last seen.	First seen.	Became common.	Last seen.
1904—April 21.						
1906—May 3.						
1908—April 25.	May 2.	May 30.	Sept. 30.	Sept. 30.	Nov. 6	
1909—April 22.	May 2.	May 31.	Oct. 11.	Oct. 17.	Nov. 6	
1910—April 30.	April 30.	June 27.	Oct. 6.		Oct. 27	
1911—April 19.	April 19.	May 11.	Sept. 28.	Sept. 28.	Oct. 30	
1912—April 26.	April 26.	May 20.	Sept. 23.	Oct. 4.	Nov. 5	
1913—April 22.	May 4.					
1914—April 29.	May 1.	June 6.				
1915—May 3.	May 16.				Oct. 23	

Forster Tern (*Sterna forsteri*). A rare migrant. Specimen in the Smith collection. I once saw three large terns over Wall lake in the fall, which I took to be this species, but was unable to distinguish for certain between this species and the common tern before they flew.

Least Tern (*Sterna antillarum*). A rare migrant. I found one shot by hunters, on the shore of Wall lake, September 29, 1912. I saw four least terns flying over Wall lake June 19, 1916. Mrs. George May also reported it from Wall lake in the fall.

Black Tern (*Hydrochelidon nigra surinamensis*). Specimen in the Smith collection. The black tern is a common migrant both spring and fall and also a tolerably common breeder. They follow the plow for insects in the same manner that Franklin gulls do, but not as persistently. During the nesting season they do not range far from the marshes or lakes, but in the fall they range far over the surrounding country, often ranging over the hayfields to catch grasshoppers. They nest in the vicinity of Wall lake and on small marshy ponds between Lake View and Sac City. A colony of about fifty nested in the "Goosepond" the summer of 1915, judging from their remonstrance as I passed through it on the railroad track several times during July.

Quotation from Rudolph M. Anderson's "Birds of Iowa." "Dr. J. A. Allen records, "great numbers, July 20, about Wall lake, in Sac Co. The young had already flown and were accompanying their parents." (Mem. Bost. Soc. i 1868, 502.)" Mr. Lee also reports them as nesting.

MIGRATION DATA.

Spring.		
Year.	First seen.	Became common.
1908—	May 15.	May 27
1909—	May 14.	May 14
1910—	May 13.	May 19
1911—	May 20.	
1912—	May 12.	May 14
1913—	May 11.	May 18
1914—	May 10.	May 10
1915—	May 9.	May 18

Double-crested Cormorant (*Phalacrocorax auritus auritus*). Reported by Mr. Smith as rare. A specimen in his collection. Reported by Mr. Lee as being called "black swan" and having the habit of staying in the middle of large lakes. He had seen none since 1894.

White Pelican (*Pelecanus erythrorhynchos*). Specimen in the

Smith collection. The pelican is a regular migrant, stopping on Wall lake to spend the night. It was common in early days, and large flocks are still seen in some years. Two pelicans, winged-tipped by hunters, were kept all summer at Lakewood resort on Wall lake about the year 1900. Mr. Lee and several others reported that seventy-five pelicans were killed by a hail storm in March or April, 1896, on a pond between Lake View and Sac City.

Merganser (*Mergus americanus*). Two specimens, a male and a female, in the Smith collection. The merganser is reported by Mr. Lee as being always rare. I identified a female on the inlet of Wall lake, May 9, 1915.

Red-breasted Merganser (*Mergus serrator*). One specimen, a female, in the Smith collection. Mrs. George May reported one seen in the "Goosepond" April 17, 1911. It must be classed as a rare migrant.

Hooded Merganser (*Lophodytes cucullatus*). A female specimen in Smith collection. It was reported rare by Mr. Smith.

Mallard (*Anas platyrhynchos*). Three specimens in the Smith collection. All the early settlers state that the mallard was a common breeder and abundant migrant. It is still one of the most common ducks, although greatly reduced in numbers, and breeds occasionally in secluded places. According to local hunters it nested in the "Goosepond" in 1915.

Black Duck (*Anas rubripes*). Mr. Lee reported killing a black duck in the spring of 1909, also that five were killed by another hunter the fall before.

Gadwall (*Chauelasmus streperus*). Specimen in the Smith collection. Reported common by Mr. Lee. I found the remains of a gadwall, I think the remnants of a Cooper hawk's meal, April 21, 1913. I identified a male and two females on the inlet of Wall lake, April 2, 1916.

Baldpate (*Mareca americana*). Specimen in the Smith collection. Reported tolerably common by Mr. Lee. I saw about fifty on Wall lake March 15, 1914, and fifteen in the "Goosepond" April 16, 1916.

Green-winged Teal (*Nettion carolinense*). Two specimens in the Smith collection. Not as common as the blue-winged teal and migrates earlier, my first seen dates ranging from March 15 to April 4. Mr. Lee stated that the green-winged teal nested until about 1883, building their nests in the prairie grass well back from the water. He said that the nests were often exposed by prairie fires and that the females would return and try to hatch out the cooked eggs, often sitting for weeks. He stated that the blue-winged teal nested in similar locations.

Blue-winged Teal (*Querquedula discors*). Reported by all the early settlers as nesting abundantly, and as more common than the

green-winged teal. It is still the most common of nesting ducks, although in extremely small numbers as compared with early days. It nested commonly in the "Goosepond" in 1915.

Cinnamon Teal (*Querquedula cyanoptera*). I identified one among many other ducks in the "Goosepond" April 18, 1915. It was resting and preening its feathers on the top of a haystack bottom surrounded by water. I had ample opportunity to observe it through eight-power binoculars, getting all identification marks. Mrs. George May also reported it in the spring of 1911, and a local hunter in the fall of 1915, both observations in the "Goosepond." The hunter has a copy of Reed's Game Bird Guide.

Shoveller or Spoonbill (*Spatula clypeata*). Specimen in the Smith collection. In my experience this duck ranks next to the mallard in abundance. First seen dates range from April 3 to May 4. During the summer of 1915 it was numerous around the "Goosepond" and I presume nested there. Mr. Lee reports it as nesting commonly in early days.

Pintail (*Dafila acuta*). Three specimens in the Smith collection. This duck nested commonly in early days and Mr. Lee reports it as a rare breeder now. In 1908 the "Goosepond" was flooded and it remained until late in June. It is one of the earliest migrants. My first seen dates range from March 15 to April 24.

Wood Duck (*Aix sponsa*). Three specimens in the Smith collection. Very rare now. Mr. Lee reported it as next to the pintail in numbers breeding in early days and as still nesting in rare instances, nests having been reported in 1916. H. B. Hayden killed one on Wall lake in 1904.

Redhead (*Marila americana*). Specimen in the Smith collection. Reported by Mr. Smith as very common in early days, he having killed one hundred twenty-nine redheads to seven canvas-backs in the years 1876 to 1881. Mr. Lee reported it common. I saw many in the "Goosepond" April 7, 1912, and Mrs. George May reported it from the same place April 16, 1911.

Canvas-back (*Marila valisineria*). Specimen in the Smith collection. Both Mr. Lee and Mr. Smith stated that it was rare in early days. It appears to be increasing in numbers. Mrs. George May identified it in the "Goosepond" April 4, 1912. Local hunters reported it more common that year than for years. I found it common in the spring of 1915, keeping company with scaup ducks in the "Goosepond."

Greater Scaup (*Marila marila*). I presume it occurs, but I have never positively identified it and have no records.

Lesser Scaup (*Marila affinis*). Specimen in the Smith collection. Reported as breeding in early days by Mr. Lee. It is a common migrant now. My first seen dates range from March 28 to May 11. It often lingers till June.

Ring-necked Duck (*Marila collaris*). Specimen in the Smith collection. Reported common by Mr. Lee. He stated that a party of hunters at Wall lake killed one hundred twenty-five in 1904.

Buffle-head (*Charitonetta albeola*). Three specimens in the Smith collection. Reported common by Mr. Lee. I saw one in the "Goosepond" May 5, 1914.

Old-squaw Duck (*Harelda hyemalis*). One specimen, a male, in the Smith collection. Mr. Smith said that this was the only one he ever saw, and considered it very rare. No others reported it.

Ruddy Duck (*Erismatura jamaicensis*). Two specimens in the Smith collection. Mr. Lee reported it rare.

Lesser Snow Goose (*Chen hyperboreus hyperboreus*). Specimen in the Smith collection. They are rare migrants at the present day. Mr. Lee reported that snow geese were quite common in early days, he having seen acres covered with them. He stated that they never nested but stayed about a month in spring and were rare in fall. Both Mr. Smith and Mr. Lee said they were very poor eating as they never got fat. On April 3, 1914, I counted eight snow geese in a flock of blue geese, which had alighted in the cornfield back of our barn. On March 28, 1915, I saw seven snow geese in a large flock of blue geese. I called them lesser snow geese because they were approximately the same size as the blue geese.

Blue Goose (*Chen carulescens*). Specimen in the Smith collection. Mr. Smith said that the one he had mounted was the only one he ever saw. Mr. Lee considered them rare, reporting about one hundred snow geese to one blue goose. In my experience this goose cannot be called rare at the present day. On April 2, 1914, about fifty blue geese and three snow geese alighted in a cornfield about one-half mile from our house. I took my binoculars and got close enough to see the rusty wash on their white heads and necks in addition to their blue bodies. The next day a larger flock of eight snow geese and one hundred sixty blue geese (I counted them, and they were so thick I missed a few) alighted and rested for some time on a bluegrass pasture. Later they alighted in a cornfield only about twenty rods from our barn, from which I watched them through my field glasses. On March 28, 1915, an enormous flock of blue geese came up the Boyer river valley from the southwest and after much preliminary circling they alighted in a dense mass about the center of the "Goosepond," where they remained until I left, or for over two hours. It was impossible to count them, but I estimated their number at two thousand or over. The flock contained seven snow geese. On April 2nd I again saw what I think was the same flock of blue geese, as there were seven snow geese in it. They were flying in immense circles high in the heavens, honking as they flew. Local

hunters reported the blue geese as present in the "Goosepond" in the spring of 1916. I did not see them as I was away from home, except for two brief visits.

White-fronted Goose (*Anser albifrons gambeli*). Both Mr. Lee and Mr. Smith reported this goose common in early days. Both stated that they were good eating as they got very fat. Mr. Lee stated that they were common in fall as well as in spring, coming about September 1st and staying until it froze up. They are tolerably common yet. I saw a small flock in the "Goosepond" March 28, 1915. Mrs. George May reported them in the same place April 14, 1911. Snow geese, blue geese, and white-fronted geese are all called brant by local hunters.

Canada Goose (*Branta canadensis canadensis*). Reported as common by both Mr. Smith and Mr. Lee, but not as common as its smaller subspecies. Mr. Lee said that the Canada goose was the only goose that ever nested in Sac county. He stated that in 1856 or 1857 a party of seven men captured a double wagon-box full of young Canada geese from one-half to two-thirds grown in a trip of about fifty miles, from Sac City up Cedar creek to Fonda, then west to Pond or Sunk grove, then to the Raccoon river and down it to Sac City. He also reported the last Canada goose nest at Correction pond in the year 1878, with perhaps some nesting at Rush lakè in 1886 or '87. He further said that Canada geese are the least common of the three subspecies now, but that thousands of Canada geese stayed at Storm lake in Buena Vista county for a month in the spring of 1914. My father reported that Canada geese nested in the "Goosepond" till 1878. Mrs. George May reported them in the "Goosepond" April 14, 1911, and I identified one April 18, 1913.

Hutchin's Goose (*Branta canadensis hutchinsi*). Reported by Mr. Lee as tolerably common both in early days and at the present time.

Cackling Goose (*Branta canadensis minima*). Mr. Lee reported that the cackling goose was more common than the Hutchin's in early days, and as more common than either Hutchin's or Canada at the present day.

Brant (*Branta bernicla glausogastra*). Mrs. George May reported five seen in the "Goosepond" in the spring of 1911.

Whistling Swan (*Olor columbianus*). Specimen in the Smith collection. Mr. Smith reported them as tolerably common. My father stated that Mr. Oscar Draper shot two swans, weighing respectively, twenty-three and one-half and twenty-four pounds, out of a flock of eight or ten, in the "Goosepond" in 1875. Mr. Lee reported swans flying over in 1888 and 1889. A swan was seen on Wall lake by hunters in 1904. Local hunters reported that a flock

of about fifty swans stayed about the lower end of the "Goosepond" for some time in the spring of 1915.

Trumpeter Swan (*Olor buccinator*). Mr. Smith has a fine specimen in his collection, but reported them very rare. Mr. Lee said that he saw swans swimming in Rush lake in nesting season in 1873. Mr. Shelt Tiberghien reported the last swan nesting about 1870.

Bittern (*Botaurus lentiginosus*). These birds are common in all wet marshy sloughs of any extent. They are more common in migration, but considerable numbers remain throughout the summer in all suitable localities. I have first seen migration dates of April 13, 1913; May 3, 1914, and May 9, 1915.

Least Bittern (*Ixobrychus exilis*). Specimen in the Smith collection. I have found the least bittern rare, never having seen more than two in one day, and these usually in the fall. I have observed it both on Wall lake and in the "Goosepond."

Great Blue Heron (*Ardca herodias herodias*). This huge heron is a tolerably common migrant in the fall, somewhat rarer in spring. It is a rare breeder. In the spring of 1915 I saw five in the air over the "Goosepond" at the same instant. I have also seen it along the Coon river and about Wall lake. Mr. Lee stated that it now nests along the Coon river and that it was much more common in early days. A pair nested along the Boyer river or in the lower end of the "Goosepond" during the summer of 1915, according to the report of a local farmer, who saw them all summer and saw the young from the time they were able to fly until the hunting season opened.

Green Heron (*Butorides virescens virescens*). Two specimens in the Smith collection. The green heron is common along the Coon river. I saw it in the "Goosepond" in the spring of 1915, and also during the summer of 1916. During this summer I also saw it frequently along the Boyer river near by. I think it nests at all the places previously mentioned, and possibly at Wall lake, although it is not numerous at the lake, even during migration.

Black-crowned Night Heron (*Nycticorax nycticorax navius*). Specimen in the Smith collection. Mr. Lee stated that these herons were common and nested at Sac City, but in most of the county it is a rare bird. It has been shot at Wall lake and at a pond north of the lake. I have seen one along Indian creek northwest of Lake View, and two were reported by a farmer boy along the Boyer river in 1914.

Whooping Crane (*Grus americana*). According to all early settlers the whooping crane was much rarer than the sandhill crane. My father stated that he had seen from one to ten in flocks of sandhill cranes, and that he had seen as high as forty in a flock

by themselves, both in the spring and fall. Mr. Shelt Tiberghien said that whooping or white cranes nested in northern Sac county until about the year 1869, and that the whooping cranes deserted this section as a breeding ground at the time that the railroad went through Newell. Mr. Lee reported none seen since 1895. My last record is March 24, 1904. Mr. Smith stated that he once secured a specimen for mounting which a neighbor had shot, but that it was temporarily left on a work bench, with its head hanging over so that the hogs could reach it, and they considered it good eating.

Sandhill Crane (*Grus mexicana*). Specimen in the Smith collection. Mr. Smith reported them very common. My father stated that a pair were seen about the farm all summer in 1875. Mr. Lee also reports them as common and breeding, two eggs being laid, with the last nest found about the year 1875. He hatched out two eggs from this nest under a goose, but could not raise the young cranes. He stated that the sandhills nested in sloughs, building their own mound for the nest and not using muskrat houses. Mr. Shelt Tiberghien reported them nesting also, with the last nest in 1878. I have found sandhill cranes only tolerably common to rare as migrants; also more common in spring than in fall. I have eight spring migration dates in the twelve years from 1904-1915, ranging from first seen on March 8th to April 10th, with the average on April 5th. I have never seen them alight save once, which was in a large pasture, in the fall. Their trumpeting can be frequently heard on spring nights as they pass overhead, although they also migrate by day. My father said that he once saw a flock of sandhills "dancing." They flopped their wings, kicked and hopped and circled about, but did not rise from the ground during the dance. Mr. Timmerman of Wall lake stated that when a boy in Franklin county he used to trap the sandhills in steel traps set in oat, wheat, or corn fields, but unless promptly secured the cranes would twist off their toes and escape. They were considered good eating.

King Rail (*Rallus elegans*). The king rail is a common breeder, nesting wherever there are suitable marshes. It is especially common in the "Goosepond" some years. I have seen the young rails there when they were about the size of young domestic chickens a few days old, and they were dead black in color. I have also seen the species about the inlet of Wall lake.

Virginia Rail (*Rallus virginianus*). Specimen in the Smith collection. I have found the Virginia rail very rare. I saw one in the "Goosepond" May 30, 1915, and one at Wall lake August 27, 1909.

Sora Rail (*Porzana carolina*). The sora rail is common in all

suitable marshy places, at least during migrations. I have picked up several dead soras which apparently had struck telephone wires or buildings during migration.

Florida Gallinule (*Gallinula galeata*). Very rare. I saw one in the "Goosepond" May 11, 1913. My father picked up a young gallinule which was lying dead by the roadside, August 17, 1908. Apparently it had flown into a telephone wire as the skin on its crown plate was broken.

Coot or Mudhen (*Fulica americana*). Specimen in the Smith collection. Very abundant during migration, especially at Wall lake and in the "Goosepond." It nests commonly in all suitable marshy places. My first seen dates range from April 3rd to 16th.

Wilson Phalarope (*Steganopus tricolor*). Specimen in the Smith collection. A rare migrant. I first identified it on May 9, 1909, in the "Goosepond," the one seen being an adult female. On September 3, 1911, I saw a young Wilson phalarope at the inlet of Wall lake. I saw an adult female in the "Goosepond" in the spring of 1916.

Avocet (*Recurvirostra americana*). Mr. Harry Colburn of Sac City killed twenty avocets along the Cedar creek in 1894. In the fall of 1914 I saw two birds along the inlet of Wall lake which must have been avocets, but they were so wary that I could not positively identify them, although they were very large shore birds with long legs, very loud call notes and a striking black and white color pattern.

Wilson Snipe (*Gallinago delicata*). Very common in suitable marshy places during migration. My spring migration dates range from April 4th to 23rd for first seen. I flushed one from a small springy creek November 28, 1915.

Long-billed Dowitcher (*Macrorhamphus griseus scolopaceus*). Very rare migrant. I first identified it in the "Goosepond" May 9, 1909, seeing one. I also saw one August 8, 1911, rowing my boat to within ten feet of where it probed the muddy shore of the inlet of Wall lake.

Stilt Sandpiper (*Micropalama himantopus*). A rare migrant. I saw two in the "Goosepond" May 23, 1915.

Pectoral Sandpiper (*Pisobia maculata*). An abundant spring migrant, common fall migrant, frequenting low wet pastures far from any open water, in the fall. My first seen dates in spring range from April 4th to May 4th and I have seen it in the fall from August 6th to September 8th.

Baird Sandpiper (*Pisobia bairdi*). A rare migrant which I have identified only once, on August 23, 1911, at the inlet of Wall lake. I watched that one through eight-power binoculars for fifteen minutes or more, at distances as close as ten feet.

Least Sandpiper (*Pisobia minutilla*). A common migrant, especially in the fall and about the inlet of Wall lake. It is less common in the "Goosepond" and marshy places. My first seen dates in fall range from August 2nd to 24th.

Red-backed Sandpiper (*Pelidna alpina sakhalina*). A rare migrant. I saw two males and one female in the "Goosepond" May 23, 1915.

Semipalmated Sandpiper (*Ereunetes pusilla*). A common migrant during the months of May, August and the first half of September, especially about the inlet. It is usually found in the company of least sandpipers and is not quite as common as that species.

Marbeled Godwit (*Limosa fedoa*). Specimen in the Smith collection. Mr. Lee reported them as formerly common and told of finding nests and eggs. Mr. Smith reported them as rare after 1875.

Hudsonian Godwit (*Limosa hamastica*). Specimen in the Smith collection. Mr. Smith reported them as rare.

Greater Yellow-legs (*Totanus melanoleucus*). Two specimens in the Smith collection. A rare spring and fall migrant at the present time. I saw one August 24, 1914, and one in the spring of 1916.

Lesser Yellow-legs (*Totanus flavipes*). A common migrant both spring and fall, about the inlet of Wall lake and the "Goosepond." My first seen dates in spring range from April 18th to May 12th; in the fall, August 4th is the earliest date.

Solitary Sandpiper (*Helodramas solitarius solitarius*). A tolerably common migrant both in spring and fall. It is more frequently found along the small creeks and streams, one or two individuals in a place, than about the larger marshes or the lake. My first seen dates in spring are from May 18th to 23rd. In the fall it comes early in August and remains as late as the second week in October.

Willet (*Catoptrophorus semipalmatus semipalmatus*). A very rare migrant. I identified one in the "Goosepond" May 30, 1915.

Upland Plover (*Bartramia longicuda*). Tolerably common spring and fall migrant at present. Mr. Lee reported it as formerly common and breeding, the last nest he knew of being about 1890. Mr. Smith reported it as nesting in timothy fields and so shy that it had to be hunted by driving up to it with a team. I can remember of a nest in our pasture, which must have been about 1898.

Spotted Sandpiper (*Actitis macularius*). Only tolerably common along the sandy shores of Wall lake and along the Coon river. I know it as a migrant only.

Long-billed Curlew (*Numenius americanus*). Specimen in the Smith collection. Mr. Smith said they were rare after he came in 1876. Mr. Lee reported seeing none of late years, but that formerly they were common and nested, the last nest about 1885.

Golden Plover (*Charadrius dominicus dominicus*). Mr. Smith said, "There were countless thousands of them running over the burned-over prairies in the spring of 1876." Mr. Lee reported that in early days Indian creek used to be a flightway for golden plover. He stated that during the spring migration a bushel basket-full could be shot there in an hour. He also reported seeing four golden plover in Buena Vista county in the fall of 1916. Dr. Speaker of Lake View reported one killed near Wall lake about 1910.

Killdeer (*Oxyechus vociferus*). Tolerably common as a migrant and tolerably common as a breeding species. I once found a nest in my cornfield over three-fourths of a mile from the nearest water. It is one of the earliest migrants, my first seen dates ranging from March 11th in 1908 and 1911 to April 3rd in 1915.

Semipalmated Plover (*Ægialitis semipalmata*). A common fall migrant, especially at the inlet of Wall lake, but rare as a spring migrant in my experience. I have seen it only once in spring, June 9, 1916, along Boyer river west of the "Goosepond."

Bob-white or Quail (*Colinus virginianus virginianus*). Two specimens in the Smith collection. The bob-white is very rare in all the prairie portions of the county at the present time. The few that are found live mostly along the edges of the timber along the Coon river. Mr. Lee reported bob-whites very scarce in 1854. Mr. Tiberghien reported that bob-whites were most numerous in 1866. Mr. Platt Armstrong of Lake View reported a few bob-whites in a patch of brush on Indian creek in 1878. The bob-whites do not thrive in the prairie portions of the county because, even if the hunters spare them, every four or five years there comes a sleet storm in winter which reduces them to the verge of extinction.

Ruffed Grouse (*Bonasa umbellus umbellus*). Extinct in the county at the present day. Mr. Lee said he saw the last one in 1886, and had seen a few others before that. Mr. Hugh Cory reported ruffed grouse rare, the last he saw being in the 1860's.

Prairie Chicken (*Tympanuchus americanus americanus*). Three specimens in the Smith collection. The status of the prairie chicken has been changed several times in Sac county. Mr. Tiberghien reported that the prairies chickens were common at the time of the earliest settlements, but that they migrated south in winter. He said that in the winter of 1855-56 fifteen chickens tried to remain and only seven of them survived. All the other chickens had migrated south, and returning the next spring were very abundant the succeeding summer and fall, nesting in great numbers on the prairie. These migrations giving *absence* in winter continued until about 1875 to 1880, when corn became a common crop. The prairie chickens then both nested and wintered abundantly. Many farmers trapped them in coop traps during the winter, some of

them drying the meat of the breasts for summer use. One albino prairie chicken attained quite a local reputation in the southern half of the county because it could never be trapped, and all the hunters made it a point to spare the "White Chicken." This period continued until about 1895, by which time the county became so thickly settled that only a few prairie chickens could find places to nest. From this time on they have been common in winter, coming in from the Dakotas or Minnesota, wintering in the stalk fields or about the fields of shocked fodder, and in the spring returning whence they came to nest. This condition continues at present, with the exception of a few remaining to breed. From 1900 to 1913 I have no knowledge, nor can I find any record of a prairie chicken nesting in Sac county. Mr. Lee reported one pair nesting in the northern part of the county in 1913 and several pairs in 1914. In 1915 one pair nested a few miles from Wall lake. I saw the brood in July when the young were about the size of bob-whites.

Prairie Sharp-tailed Grouse (*Pediocetes phasianellus campestris*). Mr. Hugh Cory said that he trapped about one hundred of these birds in the winter of 1855-56. He stated that he saw them last in the 1850's, and that they were much rarer than prairie chickens. Mr. Tiberghien also reported them rare, with the last seen in 1858.

Wild Turkey (*Meleagris gallopavo silvestris*). Both Mr. Cory and Mr. Tiberghien reported three killed at Grant City in 1854. This is the only record for the county.

Passenger pigeon (*Ectopistes migratorius*). Mr. Tiberghien said that he had seen flocks of five hundred in buckwheat fields in the fall. The last one he shot was in September, 1879. My father saw one near the "Goosepond" in the summer of 1875, and a flock of about twenty nested in the young grove about the home place one mile north of Wall lake one spring between 1880 and 1885.

Mourning Dove (*Zenaidura macroura carolinensis*). Common to abundant at times. The early settlers reported it as present at first settlement, but as much rarer than now. Since doves are very wisely protected at all times by state law they also are increasing in numbers. An occasional one spends the winter here. In the winter of 1907-08 a flock which numbered twenty on December 22nd were tempted to winter by an abundant supply of shelled popcorn, which was scattered on the ground in a thirty-acre field which had been husked with a corn picking machine. About the middle of January snow covered up most of the food supply and on February 4th only three doves were left. I saw one of these start south one evening about sunset. Zero temperatures succeeded, yet in spite of the cold one dove remained about the farm

buildings on February 29th. As migrants arrived on March 10th I think it survived. My first seen dates range from the date given to April 11th. The dove usually nests in groves about farm houses, but I once found a nest on the ground in a clover field. From the latter part of July until the doves depart on their fall migration in late October they select common roosting places, one of which happens to be our orchard. Toward sunset the doves visit some place to drink and then fly to the roosting place from all directions until between five and six hundred are roosting there. They depart again just as it becomes light in the morning, spending the day far away in pastures and grain fields. During the month of August they may be commonly found about salt troughs for cattle, seeming to eat the salt. In late October the numbers coming to the roost gradually become fewer, until none come in on whistling wings at sunset.

Turkey Vulture (*Cathartes aura septentrionalis*). Mr. Lee reported that vultures used to be very common. The last nest he saw was in 1875, and the last bird about 1910. Mrs. E. B. Hayden said that vultures or buzzards were common along the Coon river. Mr. Joe Abernathy reported two seen near Sac City in the spring of 1915.

Swallow-tailed Kite (*Elanoides forficatus*). A specimen taken in Ida county, which adjoins Sac on the west, is in the Smith collection. Mr. Lee reported the swallow-tail kite as rare, with the last one seen in 1908. Mr. Tiberghien also reported it as rare.

Marsh Hawk (*Circus hudsonius*). Specimen in the Smith collection. This species is a tolerably common breeder in suitable sloughs. I know of three sloughs within a few miles of Wall lake, where it breeds regularly. It does not nest in the "Goosepond," probably owing to the fluctuating water level. I think it occasionally winters, as I have seen it on Christmas day and early in February. First dates of arrival, other than February, are from March 29th to April 20th.

Sharp-shinned Hawk (*Accipiter velox*). Specimen in the Smith collection. A rare spring and fall migrant, with more observed in the spring than in the fall. I know of no breeding records, although they may nest in the timber along the Coon river.

Cooper Hawk (*Accipiter cooperi*). A rare spring and fall migrant. I have seen about five individuals all told. It may nest in the timber along the Coon river.

Red-tailed Hawk (*Buteo borealis borealis*). A rare spring migrant in the vicinity of Wall lake, but some years a common fall migrant in the month of October. My first seen dates in spring are March 3rd and 6th. I have no record of its nesting.

Western Red-tailed Hawk (*Buteo borealis calurus*). A rare fall

and winter visitant. One stayed nearly all winter several years ago.

Krider Hawk (*Buteo borealis krideri*). On March 25, 1914, I identified this subspecies. Its tail had the lighter colored portions almost white.

Rough-legged Hawk (*Archibuteo lagopus sancti-johannis*). Specimen in the Smith collection.

Golden Eagle (*Aquila chrysaetos*). Specimen in the Smith collection, but which was taken in Ida county.

Bald Eagle (*Haliwetus leucocephalus leucocephalus*). A specimen in the Smith collection which was taken in Crawford county. Mr. Lee said, "Bald eagles used to nest, the last nest being in 1871, at Brown's grove, near the north line of the county in Delaware township. They were always rare, six in one day being the highest usual record, but forty-two were seen in one tree about 1868."

Duck Hawk (*Falco peregrinus anatum*). I saw one of these hawks in the "Goosepond" April 16, 1916, obtaining a good look at it.

Pigeon Hawk (*Falco columbarius columbarius*). Mrs. George May reported seeing two, which she had under close observation for some time, near Herring, in the spring of 1911.

Sparrow Hawk (*Falco sparverius sparverius*). Specimen in the Smith collection. A rare migrant and still rarer as a nesting species. Dates of first arrival are from March 24th to April 23rd. A few miles south of Odebolt I saw four young only recently from the nest and attended by the parents, July 28, 1913. On June 6, 1916, I found a pair nesting in the south Chicago & Northwestern railroad bridge over the Boyer river. The nest was placed back in the top of the high wooden structure, so I could not see the young, but I could hear them calling, while the old bird swooped about my head crying, "killy," "killy."

Osprey (*Pandion haliaetus carolinensis*). Mr. Lee said that the osprey was only tolerably common, but that they were seen every spring. I saw two at Wall lake May 14, 1916.

Barn Owl (*Aluco pratincola*). Specimen in the Smith collection. Mr. Smith stated that this was the only one he ever saw.

Long-eared Owl (*Asio wilsonianus*). Specimen in the Smith collection. It is of rare occurrence. I identified one October 20, 1908, and have seen only two since. It is probably more common in the timber along the Coon river.

Short-eared Owl (*Asio flammeus*). Specimen in the Smith collection. This species is a rare breeder and at times an abundant winter resident. One February afternoon I counted seventeen flying about over the snow-covered earth, searching for meadow mice. A pair usually nest in every fair sized patch of slough grass. I saw a pair in the "Goosepond" several evenings in the summer

of 1916. I have examined numerous pellets thrown up by this species and have almost always found from one to three meadow mouse skulls in each pellet.

Barred Owl (*Strix varia varia*). Mr. Lee said that barred owls were always rare and that they are still found occasionally.

Screech Owl (*Otus asio asio*). The screech owl is a common resident the year round. Nearly every farmer's grove has its pair of screech owls, and the towns are also well supplied, as anyone who knows their call can readily testify. At my home farm a pair have nested in an artificial house, with an entrance three inches in diameter, and with ground cork in the bottom, for several years. The female has become so accustomed to people that at the time the young leave the nest she is very bold. One evening when I was picking cherries she swooped down from behind and struck me on the head. In rare instances I have heard them "screech" in broad daylight. They are proficient catchers of English sparrows and mice. In the bitter cold winter of 1914-15 a screech owl injured one eye so that it could not see from it. I found it in the barn hay loft and also a partly eaten pigeon, which was frozen, and which I removed. The next day the owl was still there, also there was another partly eaten frozen pigeon. The owl died that night and there were no more dead pigeons.

Great Horned Owl (*Bubo virginianus virginianus*). Mr. Lee stated that the great horned owls were common in the early days, but are rare now.

Snowy Owl (*Nyctea nyctea*). Three specimens in the Smith collection. In occasional very severe winters the snowy owl comes as far south as Sac county, but it is always rare. I have never seen one alive.

Burrowing Owl (*Speotyto cunicularia hypogaea*). Mr. Lee reported burrowing owls as common and nesting. I have found them only tolerably common. My first identification was September 16, 1907, on our home farm. I have found them breeding in the following localities: About four miles north of Lake View, two miles south of Wall lake, and five miles southwest of Wall lake on the hills bordering the Boyer river flood plain. Mrs. George May also reported these owls from this locality April 15, 1911. In the summer of 1916 I saw two broods of four owlets each, sitting at the mouths of their burrows in the evening, a few days before they started to fly. At this stage the adults are very angry should a person or dog appear near the burrow, and swoop toward the intruder, snapping their bills and uttering loud cries. The pellets at the mouth of the burrow seemed to consist chiefly of beetle wings from various species, with the fur and skull of an occasional mouse.